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09/210,545	12/14/1998	KATSUHISA OGAWA	35.C13212	5262

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EXAMINER

GENCO, BRIAN C

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 06/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/210,545

Applicant(s)

OGAWA ET AL.

Examiner

Brian C Genco

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 20-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Examiner has considered the third supplemental information disclosure statement containing the translated copy of the People's Republic of China's Office Action.

Applicant's amendments filed March 10, 2003 have been fully considered by the Examiner but not deemed to be persuasive.

Applicant argues that Bixby, Colley, or Kinoshita do not disclose outputting all of the pixels of a block in parallel.

In response, Examiner concedes that it appears that none of Bixby, Colley, or Kinoshita disclose outputting all of the pixels of a block in parallel, however, Examiner notes that this limitation is not claimed.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 28-29 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for providing the outputs to a signal processing circuit to perform edge enhancement, does not reasonably provide enablement for providing the inputs to the signal processing circuit in parallel on a block basis. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

In regards to claim 28 Examiner notes that the only place in the specification which talks about performing edge enhancement is on page 9, lines 1-7 of the specification. Examiner

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further notes that Figs. 3 and 4 teach that the signal processing circuit does have parallel inputs, however, as noted above there is no teaching that signals sent to the signal processing circuit be input in parallel on a block basis.

Claim 29 depends from claim 28.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 20, 23, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by (USPN 4,322,752 to Bixby).

In regards to claim 20 Bixby discloses an image pickup element comprising:

a pixel area including a plurality of partial pixel-areas (e.g., pixel blocks 1-32 shown in Fig. 4), wherein said plurality of partial pixel-areas are arranged two-dimensionally in horizontal and vertical directions (e.g., column 6, lines 37-51; Fig. 9b), and wherein each of said plurality of partial pixel-areas include photodetectors arranged two-dimensionally in the horizontal and vertical directions (e.g., column 6, lines 37-51; Fig. 9b);

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a vertical-direction selecting circuit which selects, in common, photodetectors arranged in the horizontal direction on a plurality of horizontal lines basis from among the photodetectors arranged two-dimensionally (e.g., the block select shift register selects a number of rows in common which constitute a block to be read out; element 42 of Fig. 4);

a horizontal-direction selecting circuit which selects, in common, photodetectors arranged in the vertical direction on a plurality of vertical lines basis from among the photodetectors arranged two-dimensionally (e.g., the column shift register selects which column is to be read out and since the respective columns of each block are read out simultaneously, the photodetectors in each respective column are selected in common; element 44 of Fig. 4);

a plurality of output lines which output, in parallel, signals from the photodetectors selected by said vertical-direction selecting circuit and said horizontal-direction selecting circuit (e.g., 32 output lines output the signals from 32 rows of the currently selected column and block in parallel);

wherein said vertical-direction selecting circuit and said horizontal-direction selecting circuit are controlled so that said plurality of output lines output the signals of the selected photodetectors on a partial pixel-area basis (e.g., all of the signals within a block are read out based upon the signals from the column and block shift registers).

In regards to claim 23 Bixby discloses an image pickup element formed on a single semiconductor chip, comprising:

a pixel area including an arrangement of a plurality of blocks, each block including at least two photo-detection elements (e.g., pixel blocks 1-32 shown in Fig. 4);

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a plurality of output lines which output, in parallel, signals from said at least two photo-detection elements of the block (e.g., element 45 of Fig. 4); and

an operation section which inputs, in parallel, the signals outputted in parallel from said plurality of output lines, wherein said operation section performs an interpolation processing to interpolate a predetermined signal using signals other than the predetermined signal (e.g., Bixby discloses “the red, green and blue signals from photosite rows 1, 2, and 3 are read out simultaneously and combined,” or interpolated, to give one effective line of resolution; column 6, lines 5-7).

In regards to claim 25 Bixby discloses an image pickup element formed on a single semiconductor chip, comprising:

a pixel area including an arrangement of a plurality of blocks, each block including at least two photo-detection elements (e.g., pixel blocks 1-32 shown in Fig. 4);

a plurality of output lines which output, in parallel, signals from said at least two photo-detection elements of the block (e.g., element 45 of Fig. 4); and

an operation section which inputs, in parallel, the signals outputted in parallel from said plurality of output lines, wherein said operation section performs a compression processing (e.g., Bixby discloses “the red, green and blue signals from photosite rows 1, 2, and 3 are read out simultaneously and combined,” or interpolated, to give one effective line of resolution; column 6, lines 5-7).

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Claims 20, 23, and 25 are rejected under 35 U.S.C. 102(a) as being anticipated by (WO 98/19270 A2 to Seger et al).

In regards to claim 20 Seger et al, herein Seger, discloses an image pickup element comprising:

a pixel area including a plurality of partial pixel-areas (e.g., Fig 8), wherein said plurality of partial pixel-areas are arranged two-dimensionally in horizontal and vertical directions (e.g., Fig. 8), and wherein each of said plurality of partial pixel-areas include photodetectors arranged two-dimensionally in the horizontal and vertical directions (e.g., Fig. 8);

a vertical-direction selecting circuit which selects, in common, photodetectors arranged in the horizontal direction on a plurality of horizontal lines basis from among the photodetectors arranged two-dimensionally (e.g., paragraph 7 of page 7);

a horizontal-direction selecting circuit which selects, in common, photodetectors arranged in the vertical direction on a plurality of vertical lines basis from among the photodetectors arranged two-dimensionally (e.g., paragraph 7 of page 7);

a plurality of output lines which output, in parallel, signals from the photodetectors selected by said vertical-direction selecting circuit and said horizontal-direction selecting circuit (e.g., Fig. 7);

wherein said vertical-direction selecting circuit and said horizontal-direction selecting circuit are controlled so that said plurality of output lines output the signals of the selected photodetectors on a partial pixel-area basis (e.g., Fig. 7).

In regards to claim 23 Seger discloses an image pickup element formed on a single semiconductor chip, comprising:

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a pixel area including an arrangement of a plurality of blocks, each block including at least two photo-detection elements (e.g., Fig. 8);

a plurality of output lines which output, in parallel, signals from said at least two photo-detection elements of the block (e.g., Fig. 7); and

an operation section which inputs, in parallel, the signals outputted in parallel from said plurality of output lines, wherein said operation section performs an interpolation processing to interpolate a predetermined signal using signals other than the predetermined signal (e.g., Fig. 7).

In regards to claim 25 Seger discloses an image pickup element formed on a single semiconductor chip, comprising:

a pixel area including an arrangement of a plurality of blocks, each block including at least two photo-detection elements (e.g., Fig.8);

a plurality of output lines which output, in parallel, signals from said at least two photo-detection elements of the block (e.g., Fig. 7); and

an operation section which inputs, in parallel, the signals outputted in parallel from said plurality of output lines, wherein said operation section performs a compression processing (e.g., Fig. 7).

Applicant cannot rely upon the foreign priority papers to overcome this group of rejections because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 4,322,752 to Bixby).

In regards to claim 21 it is notoriously well known to use a Bayer color filter in order to produce a color image. Official notice is taken. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have used a Bayer color filter in order to produce a color image.

In regard sot claim 22 it is notoriously well known to use a complementary color filter in order to produce a color image. Official notice is taken. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have used a complementary color filter in order to produce a color image.

Claims 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 4,322,752 to Bixby) in view of (USPN 5,196,939 to Elabd et al).

In regards to claim 24 Bixby discloses an image pickup element according to claim 23, wherein said pixel area includes a plurality of partial pixel-areas (e.g., pixel blocks 1-32 shown in Fig. 4) arranged two-dimensionally in horizontal and vertical directions (e.g., column 6, lines 37-51; Fig. 9b), and wherein each of said plurality of partial pixel-areas include photodetectors arranged two-dimensionally in the horizontal and vertical directions (e.g., column 6, lines 37-51; Fig. 9b);

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Bixby does not disclose nor preclude said image pickup element further comprising a memory which stores signals of a plurality of lines of the photodetectors arranged in the horizontal direction, and a selecting circuit which reads out the signals in parallel from said memory to said plurality of output lines on a partial pixel-area basis.

Elabd discloses said image pickup element further comprising a memory which stores signals of a plurality of lines of the photodetectors arranged in the horizontal direction (e.g., element 33 of Fig. 4 wherein the storage element 33 holds a predetermined number of rows, however it would be a matter of routine skill in the art to translate the readout circuit shown in Fig. 4 so as to output pixels from lines instead of rows), and a selecting circuit which reads out the signals in parallel from said memory to said plurality of output lines on a partial pixel-area basis (e.g., the dump drain 35 drains the unselected signals in the memory and outputs the selected ones, wherein the selected lines are in a partial pixel-area basis as shown in Fig. 2B). This enables the selection of a desired block of data from within the image as shown in Fig. 2B. Therefore it would have been obvious to one skilled in the art at the time of the invention to have added Elabd's storage and selection circuits to Bixby's invention in order to enable the selection of a block of image data from within the image as shown in Fig. 2B.

In regards to claim 26 see examiners notes on the rejection of claims 24 and 25.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 4,322,752 to Bixby) in view of (USPN 6,014,467 to Asano).

In regards to claim 27 Bixby does not disclose nor preclude an operation section which inputs, in parallel, the signals outputted in parallel from said plurality of output lines, wherein

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said operation section performs a discrete cosine transform (DCT). Asano discloses a DCT unit, element 2 of Fig. 1, which inputs 8x8 blocks of image data to the DCT in parallel (column 4, lines 48 – column 5, line 4). Such image processing clearly provides for more effective data storage and transmission, as is well known in the art. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have performed DCT post-processing in order to put the image data into a standardized compressed format and to enable more efficient data storage and transmission.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 4,322,752 to Bixby) in view of (USPN 4,816,910 to Hashimoto et al).

In regards to claim 28 Bixby discloses an image pickup element formed on a single semiconductor chip, comprising:

a pixel area including an arrangement of a plurality of blocks, each block including at least two photo-detection elements (e.g., pixel blocks 1-32 shown in Fig. 4);

a plurality of output lines which output, in parallel, signals from said at least two photo-detection elements of the block (e.g., element 45 of Fig. 4).

Bixby does not disclose nor preclude an operation section which inputs, in parallel, the signals outputted in parallel from said plurality of output lines, wherein said operation section performs edge emphasis processing. Hashimoto et al, herein Hashimoto, discloses outputting image data in parallel from an image sensor to an edge emphasis processor, or edge enhancement means (claims 6-8 on column 11, line 51 – column 12, line 8). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have had an edge

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emphasis processor at the output of Bixby's image sensor in order to perform edge enhancement with a simplified structure due to parallel inputs as disclosed by Hashimoto (column 3, lines 15-27).

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 4,322,752 to Bixby) in view of (USPN 4,816,910 to Hashimoto et al) in further view of (USPN 5,771,031 to Kinoshita et al).

In regards to claim 29 see examiners notes on the rejection of claims 24 and 26.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian C. Genco who can be reached by phone at 703-305-7881 or by fax at 703-746-8325. The examiner can normally be reached on Monday thru Friday 8:00am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on 703-308-9644. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology center 2600 customer service office whose telephone number is 703-306-0377.

Brian C Genco
Examiner
Art Unit 2615

June 2, 2003


ANDREW CHRISTENSEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600